

**BEFORE THE PUBLIC UTILITIES COMMISSION OF
THE STATE OF CALIFORNIA**



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Order Instituting Rulemaking to Develop a
Successor to Existing Net Energy Metering
Tariffs Pursuant to Public Utilities Code
Section 2827.1, and to Address Other Issues
Related to Net Energy Metering.

Rulemaking 14-07-002
(Filed July 10, 2014)

**VOTE SOLAR COMMENTS ON
THE DRAFT VERSION OF THE PUBLIC TOOL**

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In accord with “Administrative Law Judge’s Ruling Seeking Comment on Draft Version of Public Tool,” issued April 15, 2015 (Ruling), Vote Solar respectfully submits the following comments on the draft Public Tool developed by E3 for use by stakeholders in the Net Metering Successor Tariff proceeding.

I. Introduction

As noted in the Ruling, these comments may constitute the last opportunity for stakeholders to comment on the methodology, inputs, and overall transparency of the draft Public Tool before the Public Tool is finalized. The cost/benefit and cost of service impacts calculated using the Public Tool will inform the Commission’s design of the net energy metering (NEM) successor tariff, and the Public Tool may also be used in a variety of other ways by the Commission going forward to forecast distributed energy resource (DER) adoption and estimate related impacts to the grid. The Public Tool was intended to be a relatively simple and transparent tool for assessing the impacts of various tariff structures from various perspectives, and is intended to be user-friendly enough for most stakeholders to be able to work with on their own.

Unfortunately, the draft Public Tool is complex and unwieldy, with a runtime of over four hours for just one model run, and the workings of various important aspects of the tool are opaque, despite efforts on Energy Division’s part to post stakeholder questions and E3’s answers. Vote Solar does not at this time have the technical or computational resources to do

extensive model runs ourselves, and we are concerned that many other stakeholders aside from the utilities will be similarly unable to do their own detailed analysis using the Public Tool in the timeframe necessary for the proceeding. Not only is the Public Tool difficult to understand and use, but it also appears to include a number of methodological errors that, unless corrected before the final Tool is released, call into serious question the accuracy of its results.

In these comments, we highlight some of the methodological problems that appear to bias the draft Public Tool against solar, and are critical to fix before the Public Tool is finalized. We address these problems at a high level; many are discussed in greater technical detail in the separate comments submitted today by the Alliance for Solar Choice, the California Solar Energy Industries Association, and the Solar Energy Industries Association (hereinafter noted as the “Joint Solar Parties”).

II. Response to Questions in Ruling

Question 2: Computational Errors

A. Adoption Model Computational Error: We agree with the Joint Solar Parties that there appears to be a fundamental computation problem with the DER adoption model. As noted in Question 16 of the “Interim Documentation on the Draft Version of the Public Tool” available on the CPUC website, the Tool estimates that solar adoption declines drastically in 2017 even if the status quo is preserved on all levels, ie. existing rate design is preserved, full retail net metering is preserved, and the federal Investment Tax Credit remains at 30%. Although E3 defends the 2017 result in the online Q&A document, the result is illogical; rooftop solar capacity installed has increased meaningfully every year for at least the last six years, and with less than 5% of utility customers having gone solar statewide, the market is obviously nowhere near saturation. If the model gets forecasted adoption wrong in 2017 under such a simple scenario, one has to wonder what other errors might be included in later year results.

B. Storage Model Computational Error: Vote Solar and many other stakeholders commented earlier in this proceeding that since storage paired with customer-sited solar has significant growth potential during the timeframe of the Public Tool’s cost-benefit analysis, the Public Tool needs to have the capability of assessing how adoption and use of both would impact the costs and benefits of a given tariff structure. However, stakeholders have noted (see

for example Question 45 of the Q&A) that even when a user inputs very cheap storage costs, very little storage deployment results in the model. E3's response to Question 45 indicates that the model disables storage dispatch for various reasons. E3 should ensure that the storage element of the model functions accurately, otherwise the Public Tool fails to factor in a technology that many see playing a pivotal role in the near future of distributed solar.

Question 6: Erroneous or Outdated Data Inputs

A. Rate Escalation Inputs: The model default values assume extremely rapid future growth in operations & maintenance expenses for SCE and SDG&E, much higher growth than the model assumes for PG&E. This means the model projects revenue requirement increases for SCE and SDG&E of 5-7% annually for many years and results in rates doubling by 2035, creating unreasonably high projections of revenue losses via net metering. In fact, if overall rates were to increase at this pace, utilities would face mass customer defection via microgrids or other means. The default values for future increases in utility revenue requirements should not be based on a single recent year's utility filings in their GRC, but should instead be based on a reasonable annual estimate.

B. Locational Marginal Pricing: Locational Marginal Pricing (LMP) is the calculation of electricity prices at thousands of pricing nodes within California's electricity grid. It provides price signals that account for the additional costs of electricity caused by transmission congestion and line loss at various points on the grid. The draft Public Tool, however, does not incorporate LMPs, instead assuming one average energy price across the state. Since urban areas tend to be more congested, have higher LMPs and also have higher concentrations of solar customers, the Public Tool should be modified to allow the use of LMPs or a way to modify locational benefits to reflect them, or the Tool will continue to undervalue avoided energy costs from DER adoption.

C. ITC Inputs: The draft Public Tool assumes that both commercially and residentially-owned systems receive a 10% investment tax credit starting in 2017. In fact, the ITC is set to drop to 0 for customer-owned residential systems in 2017. While residential systems that are third-party owned may continue to qualify for the 10% ITC, it is

unreasonable to assume that all residential systems in the future will be third-party owned. With the recent surge of new loan products available to residential solar customers, the percentage of residential systems that are third-party owned (approximately two thirds nationwide in 2014) is likely to decline going forward, according to research from Greentech Media.¹ The Public Tool should be modified to allow different ITCs for the commercial and residential solar markets.

Question 7: Any Other Changes

A. Cost of Service Analysis: Vote Solar noted at the March 30 Energy Division workshop that the results of the draft Public Tool's Cost of Service analysis illustrative scenario results included in the workshop slides look very different from the results in the 2013 E3 NEM study, and we remain unclear as to why this is. The 2013 study showed that NEM customers of the 3 IOUs as a group paid 103% of their cost of service in 2011,² while the draft Public Tool shows that the same group in the years through 2012 paid only 79% of their cost of service.³ Both studies found that NEM customers as a group paid roughly the same percent of their cost of service before they installed DG—133% in the 2013 study, and 129% in the draft Public Tool – showing that the difference in methods must come in when assessing cost of service for customers who have installed DG.

E3 responded to Vote Solar's question at the workshop by noting that the only differences between the new cost of service methodology and the old were that 1) the new method includes CARE costs while the old does not, and 2) the model projects that many future NEM customers will be smaller use customers and will install NEM systems that offset 100% of their load, so these future customers will pay much less of their overall cost of service. We question whether it is appropriate for the model to assume that the majority of future NEM customers will offset 100% of their load, when that is far from the case now. In addition, none of differences noted by E3 between the 2013 method and the current method can reasonably justify such a large discrepancy between the historical results (103% vs 79%). If the cost of service analysis in the Public Tool is

¹ See <http://www.greentechmedia.com/articles/read/Market-Share-for-Leasing-Residential-Solar-to-Peak-in-2014>

² "California Net Energy Metering Ratepayer Impacts Evaluation," October 2013, p. 10.

³ "Workshop on Draft Version of Public Tool", March 30th 2015, slide 44.

going to be used to inform policymaking, it deserves much greater scrutiny and its methods should be made more transparent to stakeholders.

B. Ability to Vary DER Adoption Rates by Location: In the Distribution Resources Plans (DRP) proceeding (R.14-08-013), the Commission is devoting considerable resources to considering whether and how to incent greater adoption of DERs in areas of the state where they provide higher value to the grid. Unfortunately, not only does the Public Tool fail to allow the inclusion of locational marginal prices for calculating avoided costs, as noted above, but its adoption model assumes uniform penetration rates and is not designed to allow variation in DER adoption rates by location. While the Public Tool allows user inputs for locational benefits, we are not aware of a way in which those user inputs are factored in to the DER adoption model. In other words, those inputs may change the cost-benefit results of a given scenario, but they will not change the scenario itself.

In his Ruling issuing final guidance for the utilities' DRPs in R.14-08-013, President Picker stated that "the Commission, the Utilities, consumers and new service providers, must work cooperatively to revise existing incentives and tariffs to promote DER in locations that will provide the greatest net benefits to the grid."⁴ Given that the Public Tool's analysis of NEM costs and benefits extends all the way out to 2050, it is unreasonable to assume that policy and/or pricing tools won't exist well before then to incent DERs in high value locations, resulting in greater DER adoption in these areas. The draft Public Tool must be modified to allow for this capability.

III. Conclusion

Vote Solar appreciates the opportunity to file these comments on the draft Public Tool.

Date: April 28, 2015

⁴ "Assigned Commissioner's Ruling On Guidance For Public Utilities Code Section 769 – Distribution Resource Planning," issued February 2, 2015, p. 4.

Respectfully submitted,

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